

MEASURING MATTERS

Volume 47 / High School

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**National FCS Standards**

**8.2** Demonstrate food safety and sanitation procedures.

**8.2.5** Practice good personal hygiene/health procedures, including dental health and weight management and report symptoms of illness.

**8.5** Demonstrate professional food preparation methods and techniques for all menu categories to produce a variety of food products that meet customer needs.

**8.5.3** Utilize weights and measurement tools to demonstrate knowledge of portion control and proper scaling and measurement techniques of textiles, fashion, and apparel.

**OBJECTIVES**

Students will...

- Use communication, problem solving, and teamwork skills to prepare a simple recipe
- Describe the processes they used to prepare the simple recipe
- Critique and identify ways to improve the process of the lab
- Identify proper measuring tools and alternative ways to measure using commercial methods
- Calculate recipe conversions to increase recipes in standard and commercial measurements
- Determine the “best” way to measure large quantities of ingredients and justify their reasoning

**MATERIALS LIST**

If you are in need of any of the items listed below, go to [NascoEducation.com](http://NascoEducation.com) for the latest in kitchen essentials.

- Medium-Size Stainless Steel Bowl
- Nested Measuring Cup Set
- Measuring Spoon Set
- Liquid Measuring Cup
- Rubber Spatula
- Electronic Scale
- 3-qt. Saucepan
- Large Spoon
- Sheet Pan
- Sheet Pan Liners or Silicone Baking Mat
- Dish
- Wash, Rinse, and Sanitize Buckets
- Dishcloths for the Wash, Rinse, and Sanitize Buckets
- 4 Handouts (included):
  - One More Time! Worksheet
  - No-Bake Cookies Lab Evaluation
  - Chocolate Peanut Butter No-Bake Cookies Nontraditional Recipe
  - Chocolate Peanut Butter No-Bake Cookies Traditional Recipe

## DAY 1

### INTRODUCTION (15-20 MINUTES):

Set the stage for your expectations in the kitchen during your laboratory experiences. For example, hair restraints; aprons; hand washing; washing, rinsing, and sanitizing work areas; dish washing; etc.

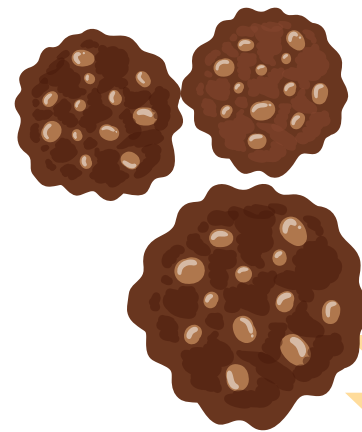
Establish work groups/teams. Have students prepare for lab — hair restraints, aprons, and hand washing, as well as cleaning work surfaces for lab.

### ACTIVITY (20-25 MINUTES):

- Distribute the recipe/worksheet with nonstandard recipe.
- Instruct the students to work together to prepare no-bake cookies. They will need to determine their approach to the lab as a team.
- Today will be the pre-lab preparation of measuring and labeling all ingredients. They will prepare the cookies when they return to class tomorrow.
- Students will properly store ingredients for lab tomorrow and clean up their work areas.

### CLOSURE (5 MINUTES):

If time still remains, have students complete questions 1-2 on the bottom of the worksheet, “Measuring Matters!” Or students can be assigned to complete the worksheet as homework.



## DAY 2

### INTRODUCTION (3-5 MINUTES):

Quick reminders of lab procedures, time frame for preparation and clean up, etc.

### ACTIVITY (30-35 MINUTES):

#### 1. STUDENTS PREPARE FOR LAB



HAIR RESTRAINT



HAND WASHING,  
AND CLEANING  
SURFACES FOR LAB



APRON

#### 2. STUDENTS PREPARE



FOLLOW THE  
RECIPE INSTRUCTIONS



GATHER INGREDIENTS



MIX INGREDIENTS

#### 3. WHEN THE RECIPE IS COMPLETED



DROP DOUGH ON TO SHEET PAN



STUDENTS CLEAN UP WORK AREAS



COOKIES SOLIDIFY

Next

STUDENTS SHOULD WORK ON REMAINING QUESTIONS ON THEIR WORKSHEET.

WHEN COOKIES ARE COOLED AND SET, INSTRUCTOR SHOULD LEAD A WALK-THROUGH DISCUSSION OF THE VARIATIONS IN THE PRODUCTS.

CLASS DISCUSSES WHY THE PRODUCTS ALL ARE SO VARIED AND HOW PEOPLE DETERMINED WHAT TO DO IN PREPARING THEIR COOKIES.

### CLOSURE AND KEY QUESTIONS (10 MINUTES):

- What similarities and differences do you notice in the products?
- Why might there be variations in the cookies?
- What might we do to have all groups end up with cookies that look and taste the same?
- Allow students to sample the products, sharing with other groups if desired to compare products.

**Option:** If desired, add a level of competition stating that you are looking to see which group can prepare the best product.

## DAY 3

### INTRODUCTION (3-5 MINUTES):

Brief review of the events of the past two days and segue to a final look at measurement on a larger scale — food service or quantity food production.

### ACTIVITY (30-40 MINUTES):

- Distribute “Measuring Matters! One More Time!” worksheet.
- Using the Internet or other sources provided, students will search the weight of different ingredients in grams according to the measurement provided on the worksheet table.
- Students will also identify the standard tools used to measure each ingredient in the recipe.
- Review in class the correct answers to the table in question 1 so students can continue to process the information in the table in question 2.
- Allow students time to complete table 2 and then answer question 3 on the worksheet.

### CLOSURE (5 MINUTES):

Students will share one “take away” statement regarding something they learned about measurement, lab procedures, teamwork, etc.

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Name: \_\_\_\_\_ Score: \_\_\_\_\_ / 30

1. Convert the recipe to weight using the Internet or other resources. 1 pt. each.

Ingredient	Measuring Cups/Spoons Which ones?	Weight in Grams
1½ cups quick oats		
½ stick butter		
1 cup granulated sugar		
½ cup milk		
¼ cup cocoa		
⅓ cup peanut butter		
1½ tsp. vanilla		

2. The recipe makes **one dozen**. What would be the measurements if it were measured in standard measure and commercial production by weight and you need **10 times the quantity**? 1 pt. each.

Ingredient	Standard Measure	Commercial by Weight
1½ cups quick oats		
½ stick butter		
1 cup granulated sugar		
½ cup milk		
¼ cup cocoa		
⅓ cup peanut butter		
1½ tsp. vanilla		

3. In a commercial setting, most measuring is done using a scale. What would be the reasoning for the scale method? 2 pts.

Name: \_\_\_\_\_ Score: \_\_\_\_\_ / 13

### Ingredients:

6 handfuls quick oats	1 handful natural unsweetened or Dutch-process cocoa
$\frac{1}{2}$ stick butter	1 small lime-size portion of creamy peanut butter
4-6 handfuls granulated sugar	$1\frac{1}{2}$ caps pure vanilla extract
2 handfuls milk	

### Directions:

1. Place oats in a large bowl. Set aside.
  2. Combine the butter, sugar, milk, and cocoa together in a medium saucepan over medium heat. Whisk until the butter has melted, then bring to a boil. Allow to boil for 1 minute without whisking. Remove from heat and, using a wooden spoon or rubber spatula, stir in the peanut butter and vanilla until completely combined. Pour this mixture over the oats, then stir to combine it all. Allow it to sit for 5 minutes. This allows the oats to soak up some moisture.
  3. During the 5 minutes, line two baking sheets with parchment paper or silicone baking mats. Make sure there is enough room in your refrigerator for the baking sheets.
  4. Drop dough with a spoon onto the lined baking sheets. If desired, flatten out and shape into a cookie. Repeat with the rest of the dough.
  5. Refrigerate the cookies for at least 30 minutes. Remove from the refrigerator and enjoy! Store leftovers covered tightly in the refrigerator for up to 1 week.
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### Questions:

1. What is your reaction to this lab? Why? 2 pts.
2. Describe how you decided to measure the ingredients. (Techniques) 3 pts.
3. Describe the approach you used to get this lab completed. (Process) 3 pts.
4. What obstacles were there in completing this lab? (Name at least 2) 2 pts.
5. How would you have approached this lab differently if you knew about the recipe ahead of time? (Organization) 3 pts.

## CHOCOLATE PEANUT BUTTER NO-BAKE COOKIES

(unconventional measurement recipe)

### **Ingredients:**

6 handfuls quick oats

$\frac{1}{2}$  stick butter

4-6 handfuls granulated sugar

2 handfuls milk

1 handful natural unsweetened or Dutch-process cocoa

1 small lime-size portion of creamy peanut butter

$1\frac{1}{2}$  caps pure vanilla extract

### **Directions:**

1. Place oats in a large bowl. Set aside.
2. Combine the butter, sugar, milk, and cocoa together in a medium saucepan over medium heat. Whisk until the butter has melted, then bring to a boil. Allow to boil for 1 minute without whisking. Remove from heat and, using a wooden spoon or rubber spatula, stir in the peanut butter and vanilla until completely combined. Pour this mixture over the oats, then stir to combine it all. Allow it to sit for 5 minutes. This allows the oats to soak up some moisture.
3. During the 5 minutes, line two baking sheets with parchment paper or silicone baking mats. Make sure there is enough room in your refrigerator for the baking sheets.
4. Drop dough with a spoon onto the lined baking sheets. If desired, flatten out and shape into a cookie. Repeat with the rest of the dough.
5. Refrigerate the cookies for at least 30 minutes. Remove from the refrigerator and enjoy! Store leftovers covered tightly in the refrigerator for up to 1 week.

## CHOCOLATE PEANUT BUTTER NO-BAKE COOKIES

(standard measurement recipe)

### **Ingredients:**

- 3 cups (240 g) quick oats
- $\frac{1}{4}$  cup ( $\frac{1}{2}$  stick; 60 g) unsalted butter
- $1\frac{1}{2}$  cups (150 g) granulated sugar
- $\frac{1}{2}$  cup (60 ml) milk (any milk works, including skim or almond milk)
- $\frac{1}{4}$  cup (21 g) natural unsweetened or Dutch-process cocoa
- $\frac{2}{3}$  cup (170 g) creamy peanut butter
- 1 Tbsp. (15 ml) pure vanilla extract

### **Directions:**

1. Place oats in a large bowl. Set aside.
2. Combine the butter, sugar, milk, and cocoa together in a medium saucepan over medium heat. Whisk until the butter has melted, then bring to a boil. Allow to boil for 1 minute without whisking. Remove from heat and, using a wooden spoon or rubber spatula, stir in the peanut butter and vanilla until completely combined. Pour this mixture over the oats, then stir to combine it all. Allow it to sit for 5 minutes. This allows the oats to soak up some moisture.
3. During the 5 minutes, line two baking sheets with parchment paper or silicone baking mats. Make sure there is enough room in your refrigerator for the baking sheets.
4. Using a 1-Tablespoon cookie scoop (or a  $\frac{5}{8}$ -oz. to 1-oz. disher), drop a Tablespoon of dough onto the lined baking sheets. If desired, flatten out and shape into a cookie. Repeat with the rest of the dough.
5. Refrigerate the cookies for at least 30 minutes. Remove from the refrigerator and enjoy! Store leftovers covered tightly in the refrigerator for up to 1 week.
6. **Make ahead tip:** You can prepare the dough through step 2. Then, cover tightly and store in the refrigerator for up to 3 days. The mixture will be very firm after spending time in the refrigerator, so allow it to come to room temperature before continuing with step 3. No-bake cookies can be frozen up to 3 months. Allow to thaw overnight in the refrigerator.

Source: <http://sallysbakingaddiction.com/2015/12/10/chocolate-peanut-butter-no-bake-cookies/>